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# **EUROPEAN PATENT APPLICATION**

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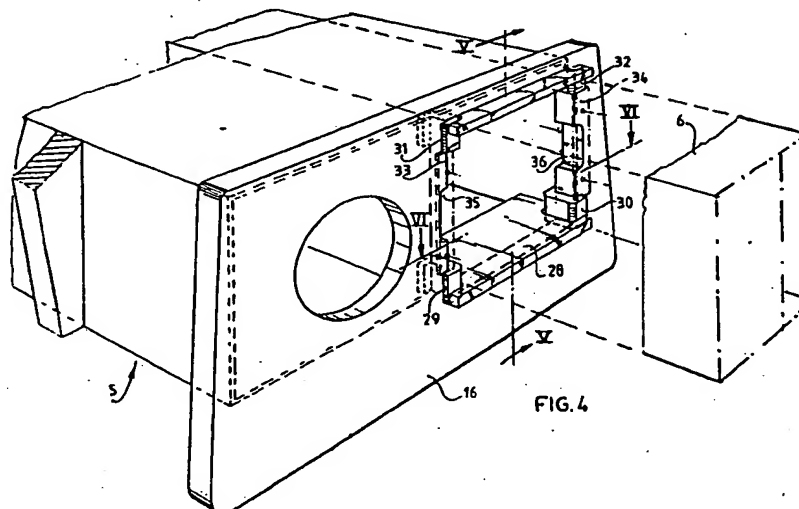
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(54) Hoisting frame for a container.

(57) Spreader for a container with telescopically in and outwardly slidable beams (6, 7) which have on the ends coupling members (8,9,10,11) gripping a container.

The spreader (1) is of a box-like construction (5) wherein the outward slidable beams (6, 7) protrude through an opening in the end wall in the box (5). the beams (6, 7) are guided in the opening by slide bearings (28) of plastic. Placed in the corner points of the opening are metal locking blocks (29,30,31,32).



**EP 0 370 585 A1**

## HOISTING FRAME FOR A CONTAINER

The invention relates to a hoisting frame for gripping and hoisting a container, comprising a guiding block coupled to the connecting means for the hoisting cable, on either side of which block are arranged telescopically in and outwardly slidable beams having on the ends thereof locking members gripping and lockable onto the container, and means for causing the beams to slide outward.

According to the invention the beam is slidably supported in the relevant end wall of the guiding block. To this end the opening in the wall of the guiding block allowing passage of the outward slidable beam is provided with a slide bearing of plastic and on the corner points of the passage opening are placed metal locking blocks for locking the beam in close fitting manner. The preferably U-shaped locking blocks assimilate the very strong torsional forces resulting from the swinging of the container hanging from the hoisting frame. Such torsional forces manifest themselves particularly on the corner points of the opening. For arranging of the U-shaped corner supports, recesses are arranged in the oppositely located portions of the passage opening.

The invention will be elucidated with reference to the drawings of an embodiment. In the drawings:

Fig. 1 shows a perspective view of a hoisting frame according to the invention,

fig. 2 is a schematic top view of a hoisting frame according to the invention,

fig. 3 is a perspective view of the guiding block,

fig. 4 shows a perspective view along the line IV in fig. 1,

fig. 5 shows a sectional view along the line V-V in fig. 4, and

fig. 6 is a sectional view along the line VI-VI in fig. 4.

The hoisting frame 1 for gripping a container comprises a guiding block 5 coupled to the connecting means 2, 3 for hoisting cables 4, on either side of which block are arranged telescopically in and outward slidable beams 6, 7. Arranged on the ends of the beams in known manner are the lockable locking members 8, 9, 10, 11.

The guiding block 5 consists of a closed box construction with a top wall 12, side walls 13, 14, a bottom wall 15 and end walls, of which one 16 is visible in fig. 4. In addition a lengthwise middle wall 17 is arranged in order to provide the box construction with a sufficient stiffness. The slide-out means for causing the beams 6, 7 to slide out are formed by an endless toothed belt 18. The toothed belt 18 is connected to the beams at for instance the points 19, 20 and 21. The toothed belt engages

drivably onto the drive spindles 22, 23 bearing mounted in the top wall 12 of the box construction 5.

The one portion of the belt 18 is situated on the one side of the lengthwise middle wall 17 and the other portion on the other side.

The beams 6, 7 are placed asymmetrically in the space of the box construction 5 intended for that purpose. Between the beams 6 and the side wall 14 and the beam 7 and the side wall 13 a space remains free in which are arranged the respective extensible cable channels 24 and 25, in the form for instance of the flexible ladder channel. The cable channel guides the lines, for example 26, such that during sliding out of the beams (see fig. 1) they are supported up to the end of the slide-out position.

The opening 27 in for instance the end wall 16 of the box construction for passage of the beam 6 is rectangular in shape. Placed in the opening 27 is a horizontal slide bearing of for example plastic 28 for sliding support of the slide-out movement of beam 6. In the corner points are placed metal locking blocks 29, 30, 31, 32 which serve to assimilate torsional forces exerted on the beam by the swinging container hanging from the hoisting frame. These forces are very considerable. By using corner supports of metal arranged in very close fitting with respect to the beam wear is countered. For mounting of the beam and the corner supports, recesses 35, 36 are arranged in the oppositely located portions 33, 34.

Assembly takes place as follows. The beam 6 is first inserted into the opening 27 whereafter the U-shaped corner supports 29, 30 and 31, 32 are then placed in the respective recesses 35 and 36 and subsequently moved to the corner points, thereby connecting in close-fitting manner to the beam.

## Claims

1. Hoisting frame (1) for gripping and hoisting a container, comprising a guiding block (5) coupled to the connecting means (2, 3) for the hoisting cable (4), on either side of which block are arranged telescopically in and outwardly slidable beams (6, 7) and locking members (8, 9, 10, 11) on the ends thereof gripping and lockable onto the container, and means for causing the beams (6, 7) to slide outward, characterized in that the opening (27) in the wall (16) of the guiding block (5) allowing passage of the outward slidable beam (7) displays a slide bearing (28) of plastic and that on

the corner points of the passage opening (27) are placed metal locking blocks (29, 30, 31, 32) for locking the beam (7) in close fitting manner.

2. Hoisting frame (1) as claimed in claim 1, characterized in that the locking block is U-shaped.

3. Hoisting frame (1) as claimed in claims 1-2, characterized in that oppositely located portions (33, 34) of the passage opening have a recess (35, 36) for arranging of the U-shaped corner supports.

4. Hoisting frame as claimed in claim 1, characterized in that the slide bearing consists of a steel plate with a covering layer of plastic.

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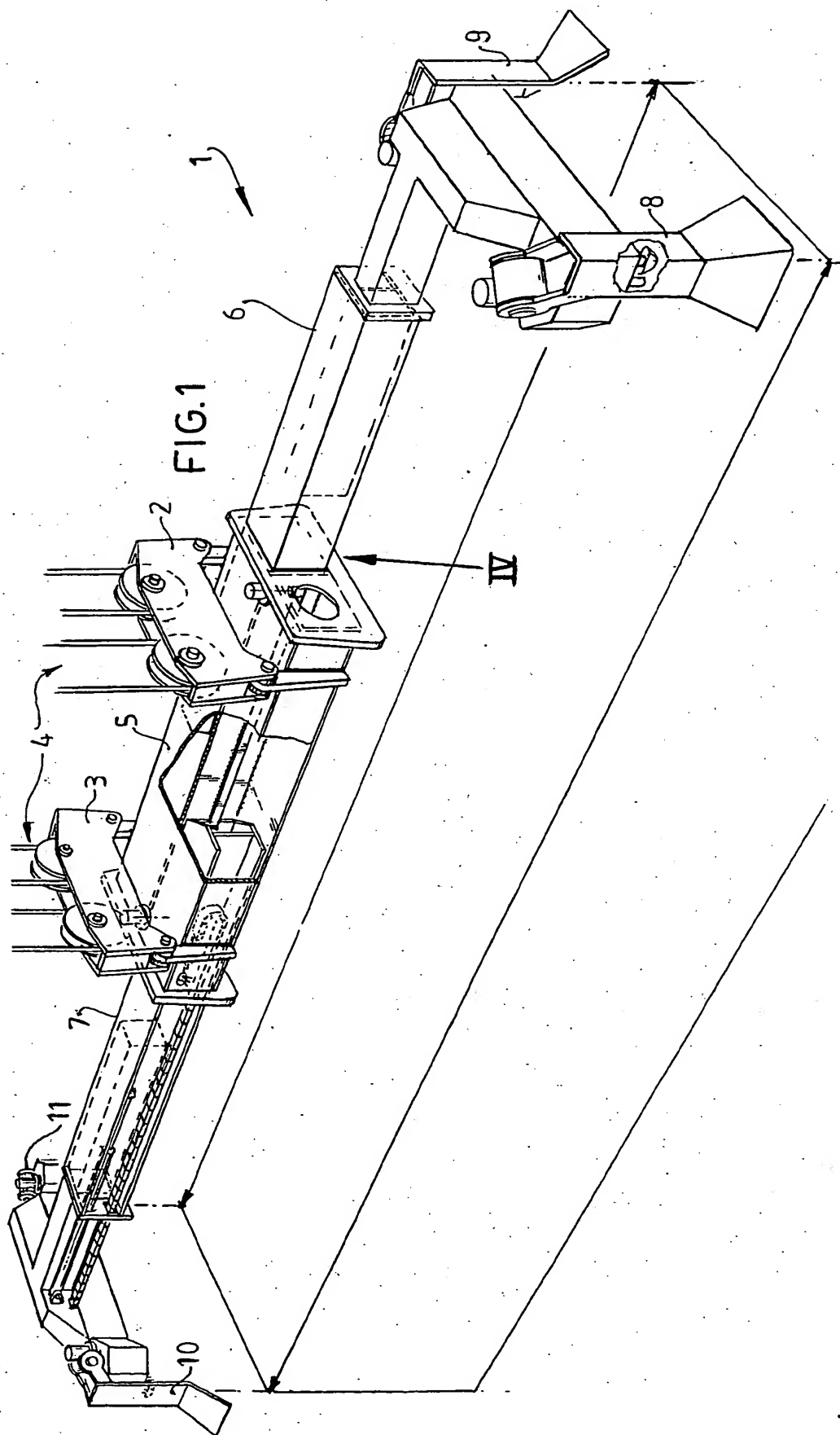
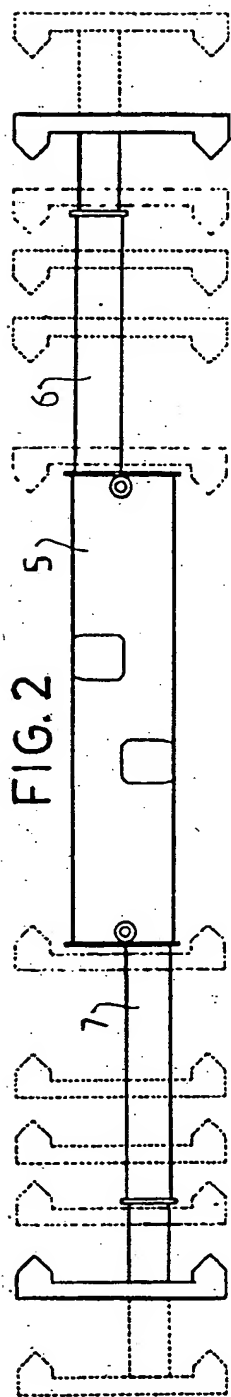
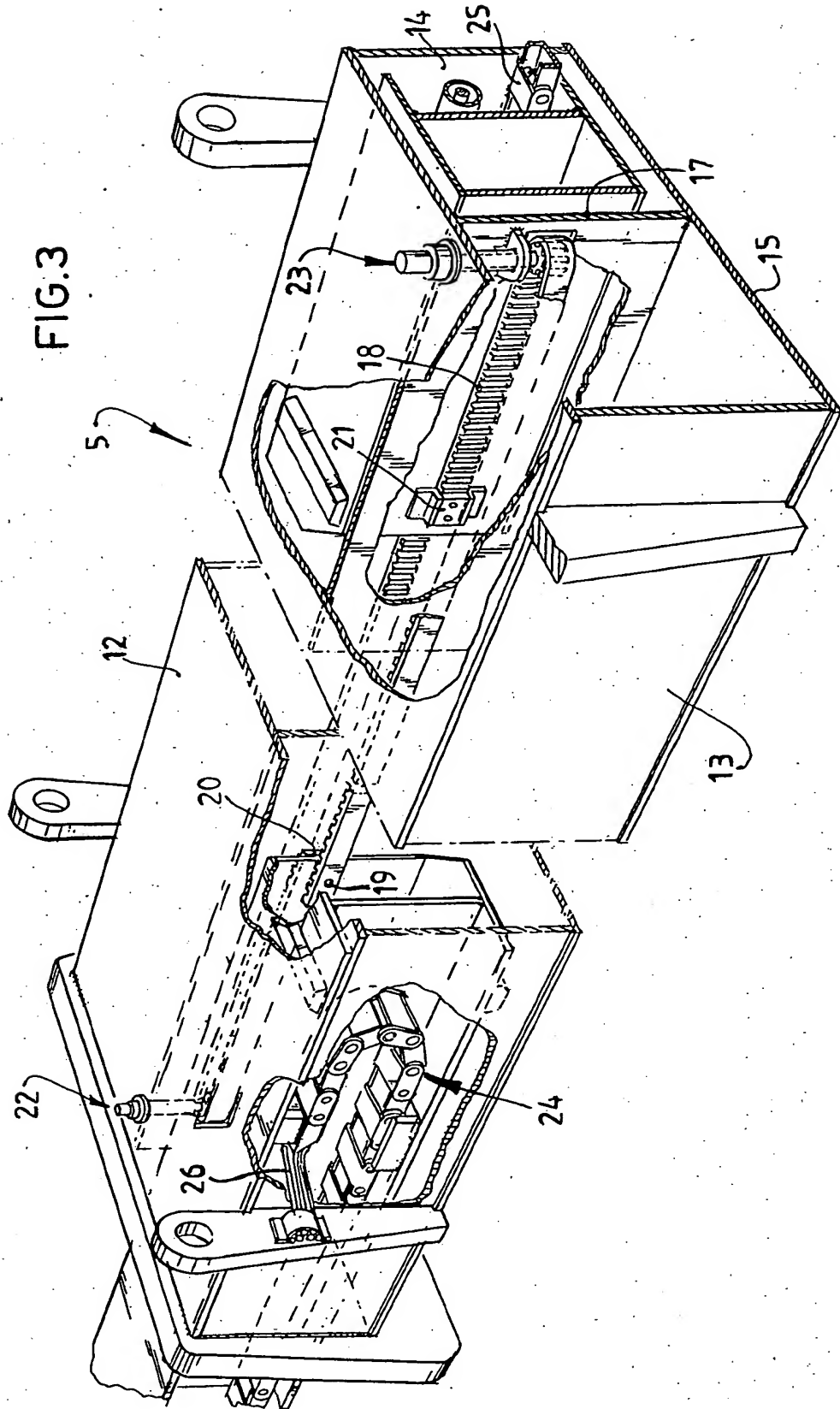
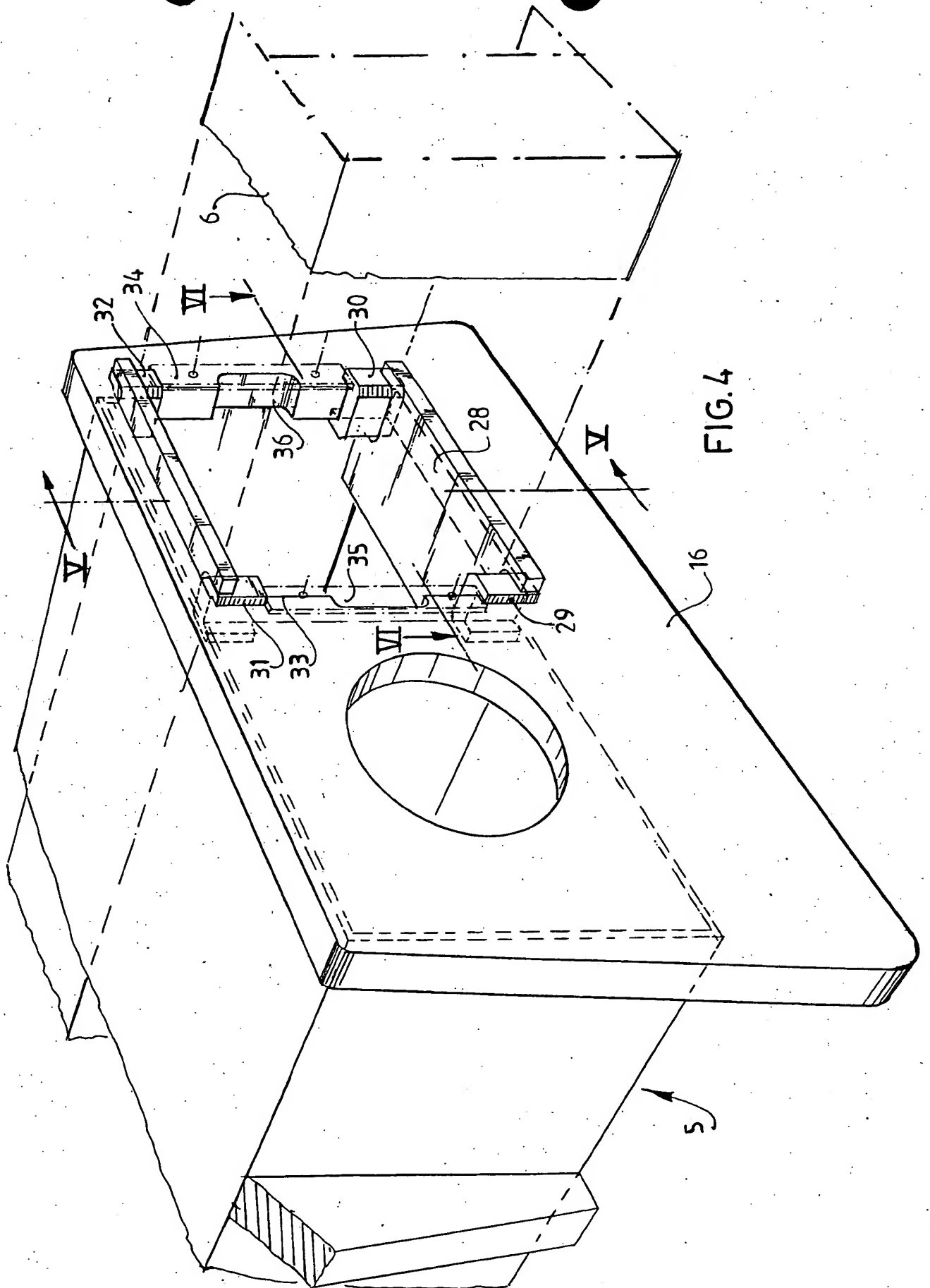
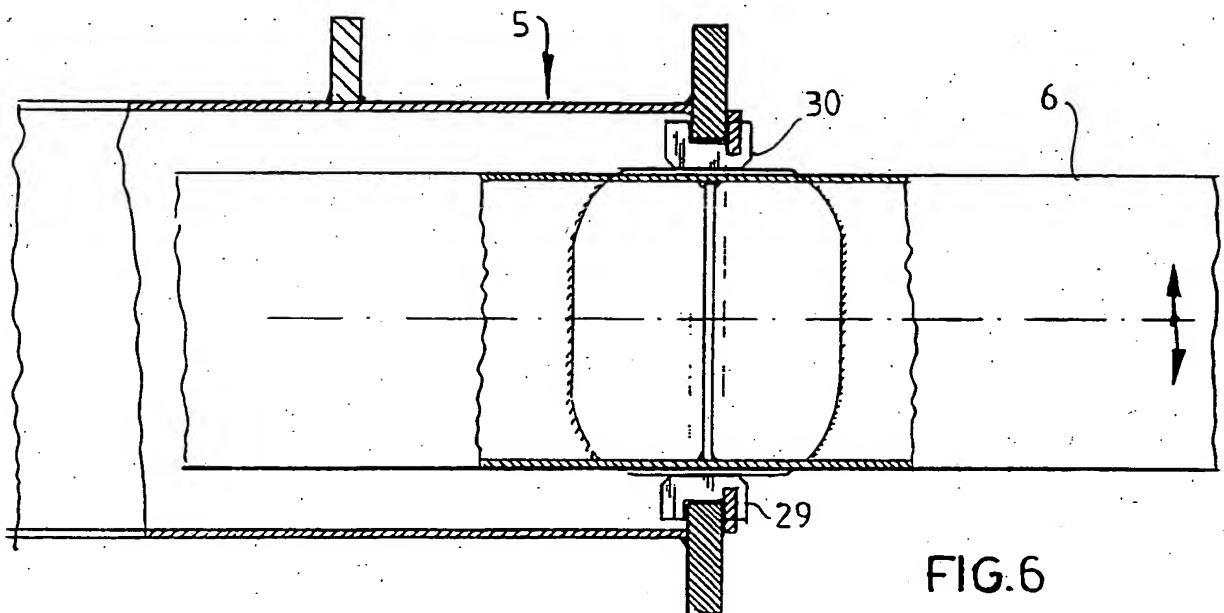
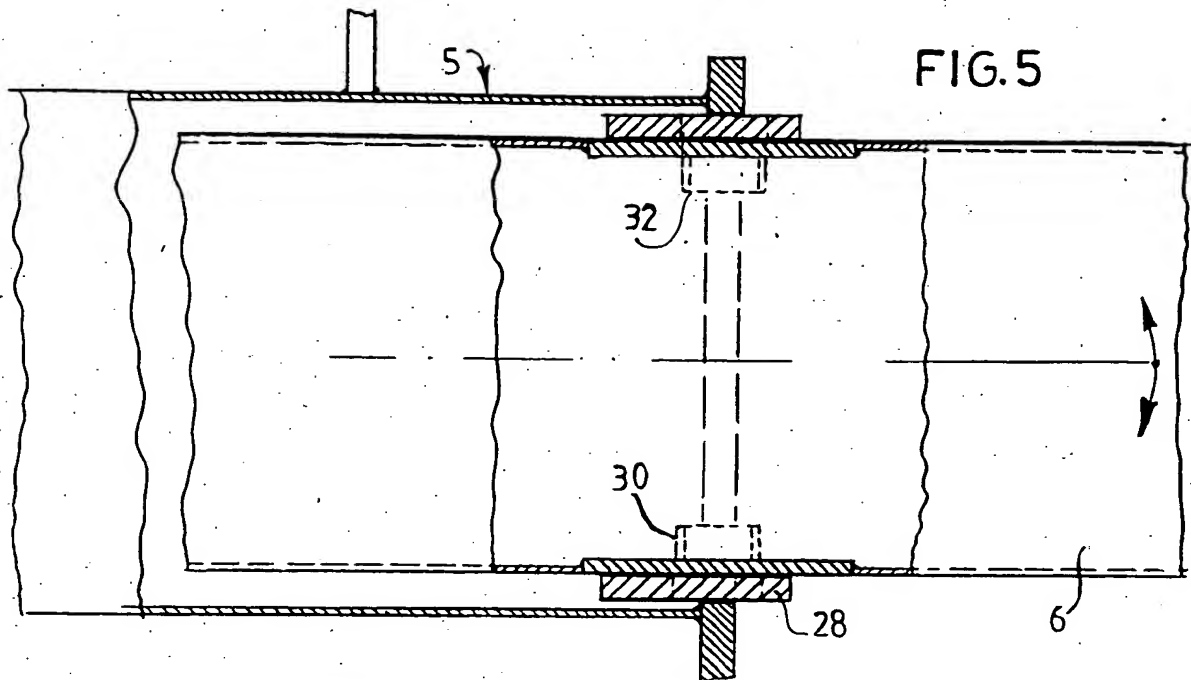


FIG.3











DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	US-A-4 488 749 (VOELZ) * Column 2, lines 17-68; column 3; column 4, lines 1-34 *	1	B 66 C 1/10
Y	GB-A-2 136 391 (HARNISCHFEGER CORP.) * Page 5, lines 5-52 *	1	
A	EP-A-0 148 418 (KALMAR)		
A	EP-A-0 055 874 (DELMACH)		
A	AT-B- 348 198 (WIENER BRÜCKENBAU- UND EISENKONSTRUKTIONS AG)		
A	DE-A-2 239 756 (FRIEDRICH KOCKS)		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 66 C B 66 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15-02-1990	Examiner VAN DEN BERGHE E.J.J.
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